

Spectrum of Congenital Heart Disease at Bahawal Victoria Hospital, Bahawalpur

ZAHID RASHID, MUHAMMAD AHSAN BAJWA, SHAHADAT HUSSAIN*

ABSTRACT

Background: Defect in the structure of heart and great vessels present at birth is called congenital heart disease. Early recognition of the problem will help to treat the child and corrective surgery will be done if possible.

Aim: To see the spectrum of congenital heart disease in children at Bahawalpur.

Methods: This descriptive study was conducted at Department of Pediatrics, Bahawal Victoria Hospital, Bahawalpur from January 2010 to June 2012. Patient from birth to 10 years of age with clinical and echocardiographic evidence of congenital heart disease were included. Demographic profile was noted.

Results: Total of 150 patients with clinical and echocardiographic evidence of congenital heart disease were included. They were 78(52%) males and 72(48%) females. Among these, 106 (70.67%) had acyanotic and 44 (29.3%) cyanotic congenital heart disease. Ventricular septal defect (31.33%) followed by patent ductus arteriosus (18%), atrial septal defect (14%) and pulmonary valve stenosis (0.66%) were the most common acyanotic congenital heart diseases, whereas Fallot's tetralogy (15.13%) followed by transposition of great vessels (5.92%) were the commonest cyanotic congenital heart diseases.

Conclusion: Congenital heart disease are common in pediatrics. Ventricular septal defect and Fallot's tetralogy are the leading ones but other kind of congenital heart diseases were also seen.

Keywords: Congenital heart disease, Cyanotic congenital heart disease, Acyanotic congenital heart disease.

INTRODUCTION

Congenital heart disease (CHD) is the most common congenital abnormality found in pediatrics, approximately 25% of all the congenital anomalies¹. Daily in the ward or busy pediatric emergency unit, we come across one or two patients having congenital heart disease. Its incidence is 0.8% of total live births² but it is the disease having progression with estimated greater than one million new cases occurred³. Definitely it is one of the cause of morbidity and mortality in paediatrics⁴. Now it is supposed that due to advancement in medical science morbidity and mortality of congenital heart disease has decreased today⁵. The spectrum of congenital heart disease is very wide, it is from asymptomatic cardiac lesion to full-blown cardiac compromise in a symptomatic syndromic situation like vector disease⁶. Congenital heart disease grossly consist of two groups acyanotic and cyanotic congenital heart diseases. Study is meant to observe the spectrum of congenital heart disease found in pediatric unit.

Department of Paediatrics & Cardiology, Bahawal Victoria Hospital, Bahawalpur.*

Correspondence to Dr. Muhammad Ahsan Bajwa, Senior Registrar

MATERIAL AND METHODS

This was a descriptive study carried out for a period of two and half year, January 2010 to June 2012 at Department of Pediatrics, Bahawal Victoria Hospital, Quaid-e-Azam Medical College, Bahawalpur. Patient from birth to 10 years of age with clinical and echocardiographic evidence of congenital heart disease were included. Demo-graphic profile (name, age, sex) was noted. All the data was recorded on a proforma, and the data entered and analyzed for frequency, percent-ages and means on SPSS version 16. Examination pertinent to cardiovascular system was done. Echocardiography 2D with Doppler examination was performed. Consideration was given to total number of cases of congenital heart disease, age at presentation, sex distribution and type of congenital heart disease. Patients with bicuspid aortic valve in the absence of aortic valve stenosis, mitral valve prolapse; and cardiac malposition unaccompanied by structural heart disease were excluded. Premature babies and patient with acquired heart diseases were also excluded.

RESULTS

A total of 150 patients were included; 78 males (52 %) and 72 females (48%). Patients were from new-

born to 10 years of age with mean age of 16.95±26.81 months. Patients under 1 year of age were 114(71%). Out of these, 108 (71%) patients had acyanotic and 44 (29%) cyanotic congenital heart lesions. Ventricular septal defect followed by patent ductus arteriosus, atrial septal defect, and pulmonary valve stenosis were the commonest acyanotic congenital heart defects; 31.33%, 18%, 14%, 0.66% respectively. Tetralogy of Fallot (15.13%) followed by transposition of the great arteries (5.92 %) were the commonest cyanotic congenital heart diseases. (Table 1)

Table 1: Sex and percentage distribution of congenital heart disease (n=150)

Cardiac lesion	Male	Female	Total
Acyanotic			
Ventricular septal defect	27	20	47(31.33%)
Patent ductus arteriosus	7	20	27(18%)
Atrial septal defect	13	8	21(14%)
Pulmonary valve stenosis	1	0	1(0.66%)
Atrio-ventricular canal defect	4	6	10(6.66%)
Cyanotic			
Tetralogy of Fallot	15	8	23(15.13%)
Transposition of the great arteries	5	4	9(5.92%)
Complex congenital heart disease	4	3	7(4.6%)
Tricuspid atresia	1	2	3(1.97%)
Total anomalous pulmonary venous return (APVR)	1	1	2(1.32%)

DISCUSSION

The prime objective of the our study was to observed the pattern of congenital heart disease in patients presenting at Bahawal Victoria Hospital Bahawalpur. In Pakistan majority of the child birth still takes place at home and routine neonatal screening is not common, so it is very difficult to calculate true birth prevalence of congenital heart disease⁷. In the present study, there is slight predominance of male sex among patients with congenital heart disease like study of our locality⁸. But somewhere no difference between sexes were observed.^{9,10} Most of the cases (65%) are detected in in-fancy. It is consistent with studies done globally^{11,12}.

In our study the frequency of VSD was 31.33%. This is comparable to worldwide incidence (25– 30%)² and to that reported by Zahid SB et al¹³ at Rehman Medical Institute Peshawar. Patent ductus arteriosus is the next most common acyanotic CHD (18%) in this study. It is consistent with that reported in Saudi

Arabia 15.8%, Nigeria (20.9% and Cape town (16.1%)¹⁴. But in some other studies ASD (Atrial septal defect) found second most common among acyanotic defect however, the difference is not so wide¹⁵. ASD ranked third in frequency (14%) in our study which correlates with that found at Australia (13.4%)¹⁴. Pulmonary valve stenosis is the fourth most common acyanotic congenital heart lesion (0.66%) in this study. It is also consistent with that reported by other authors^{16,17}.

Tetralogy of Fallot (15.13%) followed by transposition of the great vessels (5.92%) were the commonest cyanotic congenital heart lesions in our study. This finding is similar to other studies performed globally^{16, 18}. Complex congenital heart disease was seen in (4.6%) patients in this study while it is reported a slight higher 6.4% at Karachi Center by Sadiq et al¹⁹.

Congenital heart disease is a multifactorial pattern of inheritance. A combination of genetic predisposition and environmental stimuli believe to cause of its occurrence. However a number of cases are associated with some specific chromosomal or syndromic diseases. Genetic counselling to the parents of congenital heart disease is one of the corner stone of its management²⁰. Curative treatment of congenital heart disease is a complex process and includes both medical and surgical management.

CONCLUSION

Congenital heart disease are common in pediatrics. Ventricular septal defect and Fallot's tetralogy are the leading ones in acyanotic and cyanotic groups but other kind of congenital heart diseases were also seen.

REFERENCES

1. Bakhtyar Zahid S, Zeb Jan A, Ahmed S, Achakzai H. Spectrum of congenital heart disease in children admitted for cardiac surgery at Rehman Medical Institute, Peshawar, Pakistan. Pak J Med Sci. 2013;29(1):173–6.
2. Brestein D. Epidemiology and genetic Basis of Congenital Heart Disease Prevalence. Nelson Text Book of Pediatrics, 18th edition 2007; 1878–1 881.
3. Moller JH, Taubert KA, Allen HD, et al. Cardiovascular health and disease in Children: current status. A special writing group from the task force on children and youth, American Heart Association. Circulation 1994;89: 923-30.
4. Aburawi EH. The Burden of Congenital Heart Disease in Libya. Libyan J. Med 2006; 1: 120–2.
5. Perloff JK, Warnes CA. Challenges posed by adults with repaired congenital heart disease. Circulation 2001 ;103:2637-43.

ORIGINAL ARTICLE

6. Tharakan JA. Admixture lesions in congenital cyanotic heart disease. *Ann Pediatr Cardiol*. 2011;4(1):53–9.
7. Rahim F, Younas M, Gandapur AJ, Talat A. Pattern of congenital heart disease in a tertiary care center, Peshawar. *Pak J Med Sci*. 2003;19(1):19-22.
8. Malik S, Majeed R, Channer MS, Saleem MI. Frequency of cardiac defects among children at echocardiography centre in a teaching hospital. *Pak J Med Sci* 2009;25:712-7.
9. Tefuarani N, Hawker R, Vince J, Sleigh A, Williams G. Congenital heart disease in Papua new Guinean children. *Ann Trop Paediatr*. 2001 ;21 :285-92.
10. Burki MK and Babar GS. Prevalence and Pat-tern of Congenital Heart Diseases in azara. *J Ayub Med Coll* 2001;13:16-8.
11. Akhtar K, Maadullah, Ahmed W. Profile of congenital heart disease and correlation to risk adjustment for surgery; an Echocardiographic study. *J Coll Physicians Surg Pak* 2008;18:334-7.
12. George IO and Frank-Brigs AI. Pattern and clinical presentation of congenital heart disease in Port-Harcourt. *Niger J Med* 2009;18:211-4.
13. Zahid SB, Jan AZ, Ahmed S, Achakzai H. Spectrum of congenital heart disease in children admitted for cardiac surgery at Rehman Medical Institute, Peshawar, Pakistan. *Pakistan Journal of Medical Sciences* [Internet]. 2012 Nov 1 [cited 2014 Aug 14];29(1). Available from: <http://pjms.com>.
14. Abbag F. Pattern of Congenital Heart Disease in the Southwestern Region of Saudi Arabia. *Ann Saudi Med* 1998;18:393-5.
15. Memon Y, Majeed R, Memon F. PATTERN OF CONGENITAL HEART DISEASE AT LIAQUAT UNIVERSITY HOSPITAL HYDERABAD. *Pakistan Heart Journal* [Internet]. 2012 Aug 5 [cited 2014 Aug 14];40(1-2). Available from: <http://www.pkheartjournal.com/index.php/pkheart/article/view/45>
16. Khaled A. Pattern of congenital heart disease in Jordan. *Eur J Gen Med* 2009; 6:161 -5.
17. Aman W, Sherin A, Hafizullah M. Frequency of congenital heart diseases in patients under the age of 12 years at Lady Reading Hospital Peshawar. *JPMI* 2006;20:64-9.
18. Akhtar K, Maadullah, Ahmed W. Profile of congenital heart disease and correlation to risk adjustment for surgery; an Echocardiographic study. *J Coll Physicians Surg Pak* 2008;18:334-7.
19. Sadiq M, Roshan B, Khan A, Latif F, Bashir I, heart disease in Ceylon. *Br Heart J* 1970.
20. Smitha R, Karat SC, Narayanappa D, Krishnamurthy B, Prasanth SN, Ramachandra NB. Prevalence of Congenital Heart Diseases in Mysore. *Indian J Hum Gen* 2006;12:11-16.